

Modest Increases Proposed for Federal R&D in FY 2000

AAAS Preliminary Analysis of R&D in the FY 2000 Budget

(All figures in this analysis are **preliminary** and will be revised in later AAAS releases. This analysis is a preview of the forthcoming *AAAS Report XXIV: Research and Development FY 2000*, a comprehensive look at the President's budget for R&D in FY 2000, which will be released at the 24th Annual AAAS Colloquium on Science and Technology Policy, April 14-16, 1999, in Washington, DC. More information on the report and the Colloquium can be found at the end of this analysis.)

President Clinton released his proposed budget for the coming fiscal year on February 1. The proposed FY 2000 budget projects a string of surpluses well into the next century, following last year's unified budget surplus, the first in three decades.

The budget calls for the implementation of a complicated and already-controversial set of proposals for using the surpluses to extend the solvency of Social Security and Medicare for decades to come. In contrast, the President's budget proposes fiscal restraint in FY 2000 for discretionary spending, the one-third of the federal budget out of which nearly all federal support of research and development (R&D) is funded.

R&D in the FY 2000 Budget: More for Basic Research, NSF, DOE, and Computing

Because of the tight constraints on discretionary spending imposed by a statutory cap, discretionary programs are caught in a funding squeeze in FY 2000. As a result, the budget proposal contains either cuts or small to moderate increases for most R&D programs in FY 2000, in contrast to across-the-board increases in FY 1999. Nevertheless, the budget proposal does find room for significant increases for a few priority programs and some new initiatives.

- The request for total federal R&D in FY 2000 is \$78.2 billion, \$1.0 billion or 1.3 percent less than FY 1999 (see Table 1).
- Nondefense R&D would exceed defense R&D for the first time since the Carter Administration, fulfilling a Clinton Administration goal. Nondefense R&D would increase by \$1.1 billion or 2.9 percent to \$39.8 billion, or 51 percent of total R&D (see Table 2). The increase would be slightly ahead of the expected 2.0 percent inflation rate. Although spending on military weapons and military personnel would increase, defense R&D would fall \$2.2 billion to \$38.5 billion, a decline of 5.3 percent from FY 1999.
- Information technology (IT) is a high priority in the request. The FY 2000 budget proposes an Information Technology for the 21st Century (IT²) initiative of \$366 million in new funding for long-term fundamental research in computing and communications, development of a new generation of powerful supercomputers and infrastructure for civilian applications, and research on the economic and social implications of information technology. The National Science Foundation (NSF; \$146 million), the Department of Energy (DOE; \$70 million), and the Department of Defense (DOD; \$100 million) would be the lead agencies in this effort. Existing programs in IT such as DOE's Accelerated Strategic Computing Initiative (ASCI; up 13 percent to \$341 million) would also receive significant increases.

- Among mission areas, R&D in general science and energy are clear priorities in the FY 2000 request (see Table 2). Energy-related R&D in DOE would receive an 8.6 percent increase to \$1.3 billion because of additional funding for renewable energy technologies and energy conservation. General science R&D would increase 6.5 percent or \$350 million to \$5.8 billion because of large increases for selected programs in NSF and DOE, especially those involved in the IT² initiative. Transportation R&D would also increase (up 11.6 percent to \$2.3 billion) because of new programs in highway R&D proposed for the Department of Transportation (DOT).
- Basic research continues to be high priority for the Clinton Administration. Basic research would total \$18.2 billion, an increase of \$727 million or 4.2 percent, following an even larger increase of \$1.8 billion in FY 1999 (see Table 3). Basic research funding would jump significantly at NSF (\$2.5 billion, up 9.5 percent) and the National Aeronautics and Space Administration (NASA; \$2.6 billion, up 13.3 percent). Applied research funding would remain flat at \$16.2 billion.
- NSF and DOE's nondefense programs emerge as favored agencies in the request because of their support for the priority areas of basic research, general science and energy-related R&D, and the IT² initiative. NSF's R&D budget would increase by \$213 million to \$2.9 billion (up 7.8 percent). DOE's total R&D budget, including defense programs, would increase by 3.1 percent, but DOE's nondefense R&D programs in science and energy would increase by 6.4 percent to \$4.0 billion.
- Federal R&D performed by colleges and universities would total \$15.5 billion in FY 2000 (up 2.3 percent; see Table 4). NSF would increase its support by \$170 million or 7.9 percent to \$2.3 billion. The largest agency sponsor of academic research would continue to be the Department of Health and Human Services (HHS; \$9.6 billion), with 62 percent of total federal support. Nearly all HHS support comes from the National Institutes of Health (NIH).
- The NIH budget (including non-R&D components) would increase by \$320 million or 2.0 percent to \$15.9 billion in FY 2000, far less than the 15 percent increase NIH received in FY 1999 (see Figure 1). Most institutes and centers would receive increases between 2 and 3 percent. The new Center for Complementary and Alternative Medicine, created in FY 1999, would receive \$50 million in FY 2000.
- NSF's R&D would total \$2.9 billion, up 7.8 percent, within a total budget request of \$3.9 billion. The Directorate for Computer and Information Science and Engineering (CISE) would receive \$110 million in new IT² funds, for a total CISE budget of \$423 million, an increase of 41.5 percent. Another \$36 million for IT² would come from Major Research Equipment for the development of terascale computing systems. In addition to funding in the traditional directorates, there is a new Integrative Activities account in FY 1999 to support emerging cross-disciplinary research and research instrumentation. The FY 2000 request of \$161 million includes \$50 million for abiocomplexity initiative.
- DOD's R&D would fall 5.8 percent or \$2.1 billion to \$35.1 billion, mostly because of cuts in weapons development activities. Although there would be an increase in the total DOD budget in FY 2000, the additional funds would mostly go toward military salaries and weapons procurement. Among the DOD R&D categories, only the "6.1" (basic research) category would show even a slight increase. DOD's basic research would total \$1.1 billion, only \$6

million above FY 1999, while applied research ("6.2") would fall by 6.1 percent to \$3.0 billion. The Defense Advanced Research Projects Agency (DARPA) would fund \$100 million of the IT² initiative, and would nearly double its research effort in anti-terrorism biological warfare defense (\$146 million).

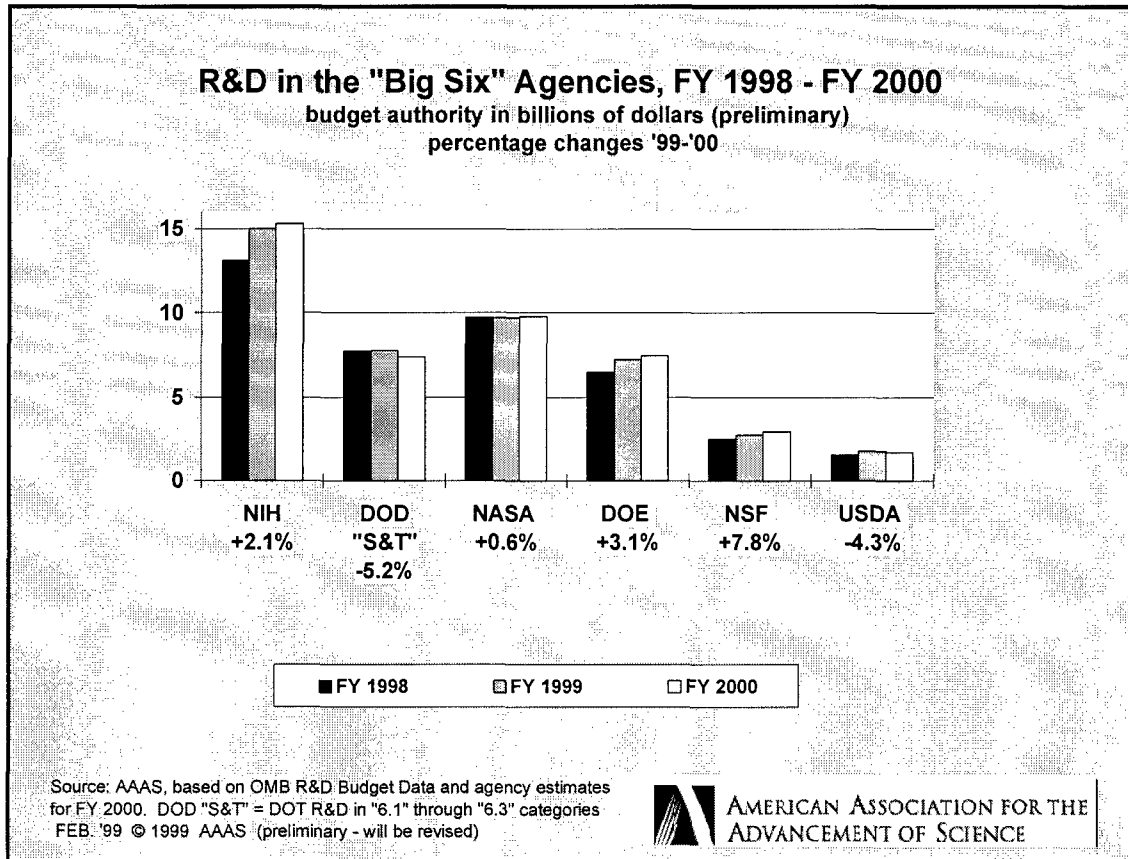


Figure 1.

- The total NASA budget (\$13.6 billion) would decline in FY 2000, but NASA's R&D would increase slightly to \$9.8 billion. The International Space Station project would receive \$2.5 billion (up \$178 million or 7.7 percent), including \$200 million to assure completion of Russian components. There would be increases for Space Science (up 3.7 percent to \$2.2 billion) and Earth Science (up 3.2 percent to \$1.5 billion), but a steep 25 percent cut to Aero-Space Technology programs (\$1.0 billion), which fund NASA's aeronautics R&D and new space vehicles development.
- DOE's nondefense R&D budget of \$4.0 billion (up 6.4 percent) includes \$70 million for the Scientific Simulation Initiative (SSI), DOE's contribution to the IT² initiative focused on R&D on a new generation of computer simulation and modeling tools. The budget also includes \$214 million for the Spallation Neutron Source, and operating funds for a large number of scientific user facilities coming on line in FY 2000. In energy, there would be increases of 20 percent for Solar and Renewables R&D and Energy Conservation R&D.
- The U.S. Department of Agriculture's (USDA) R&D budget of \$1.7 billion in FY 2000 would be a cut from FY 1999, but the FY 1999 total assumes that \$120 million in funds for a new

competitive grants program that was blocked by Congress will be made available in FY 1999. The FY 2000 total would be 10 percent above the FY 1998 funding level (see Figure 1), but actual funding could be even higher because the blocked FY 1999 funds are proposed for obligation in FY 2000. USDA proposes \$200 million for the National Research Initiative competitive grants program, \$81 million more than the current year.

The Budgetary Context for FY 2000

Nearly all federal R&D is funded through the discretionary portion of the budget, the one-third of the budget subject to annual appropriations. The President proposes \$555 billion in discretionary budget authority for FY 2000 (defense and nondefense). This represents a cut of about \$2 billion from the FY 1999 funding level. At the same time, the Clinton Administration proposes an increase for DOD (non-R&D) spending, which accounts for half of the discretionary budget. Within the shrinking discretionary budget, the proposal to increase DOD spending would result in a cut of about 1.5 percent from nondefense discretionary programs.

The Administration was constrained in drafting its discretionary proposals by discretionary spending caps signed into law in 1997. The FY 2000 cap, a single cap for all discretionary in contrast to separate caps for defense and nondefense in previous years, is only \$537 billion, \$18 billion below the request.

Congress and the President faced a similar problem last year. Although the caps for FY 1999 were originally about \$534 billion, Congress and the President appropriated approximately \$557 billion for discretionary spending in FY 1999 and circumvented the caps through a variety of measures, including the designation of billions of dollars in spending as "emergency" and therefore exempt from the caps.

In order to fit discretionary spending under the cap in FY 2000, the President proposes an \$18 billion package of offsets, similar to his proposals last February to offset discretionary spending above the FY 1999 caps. For FY 2000, the largest offset would come from tobacco: the President proposes a new 55-cent-a-pack tobacco tax, and an accelerated phase-in of an existing tobacco tax increase. Other offsets would come from extending a Superfund tax, new aviation user fees, and a package called "health care savings," including a one-year freeze on Medicare payment rates to hospitals. These proposed revenues or program savings would be credited toward discretionary spending above the cap.

Although the federal unified surplus is projected to grow over the next several years, including a projected \$117 billion surplus in FY 2000, neither the President nor Congress appears inclined at the moment to use the surplus to finance additional discretionary spending. The simple measure of raising the FY 2000 cap is politically unacceptable at the moment, because it would mean reducing the projected surplus, a surplus that has already been designated as off limits except to preserve Social Security, finance tax cuts, or both. Because of his stated intention to use Social Security surpluses only to save Social Security, the President could not propose raising the cap, because to do so would tap a surplus that exists only because a Social Security trust fund surplus (an off-budget surplus) masks a deficit (on-budget deficit) in the rest of the government. Neither could he propose "emergency" spending for a fiscal year still eight months away. Instead, his package of offsets is neutral to the surplus, and his complicated set of proposals for how to use the surplus focuses chiefly on paying down the national debt held by the public, investing a portion of Social Security surpluses in the stock market, and creating individual savings accounts to supplement

Social Security. Only in future years, when the surplus is projected to grow to a level where there would be a surplus even without Social Security, would additional discretionary spending be considered.

The President's proposals for federal R&D, then, are set in a context where the budget surplus and entitlement programs grow but total discretionary spending stays flat, requiring any requested increases to be matched by cuts in other programs. Even the flat overall level of discretionary spending depends on a variety of offsetting revenues and program cuts that may not be approved by Congress.

If it fails to approve offsets such as a new tobacco tax, then Congress would be forced to make steep cuts, find alternate offsets to stay within the cap, or raise the cap. Congress would face the same problem if it wanted to provide increases above the President's request for its own high-priority programs such as DOD. Last October, faced with a similar situation, Congress left the statutory cap alone, provided increases for both defense and nondefense programs, designated most of the extra spending as "emergency," and in effect quietly reduced the FY 1999 surplus below what it would have been otherwise. There is certain to be a pitched battle over how to finance even the modest discretionary proposals for FY 2000, especially this year when there are no longer separate caps for defense and nondefense programs which prevented cutting one to boost funding for the other.

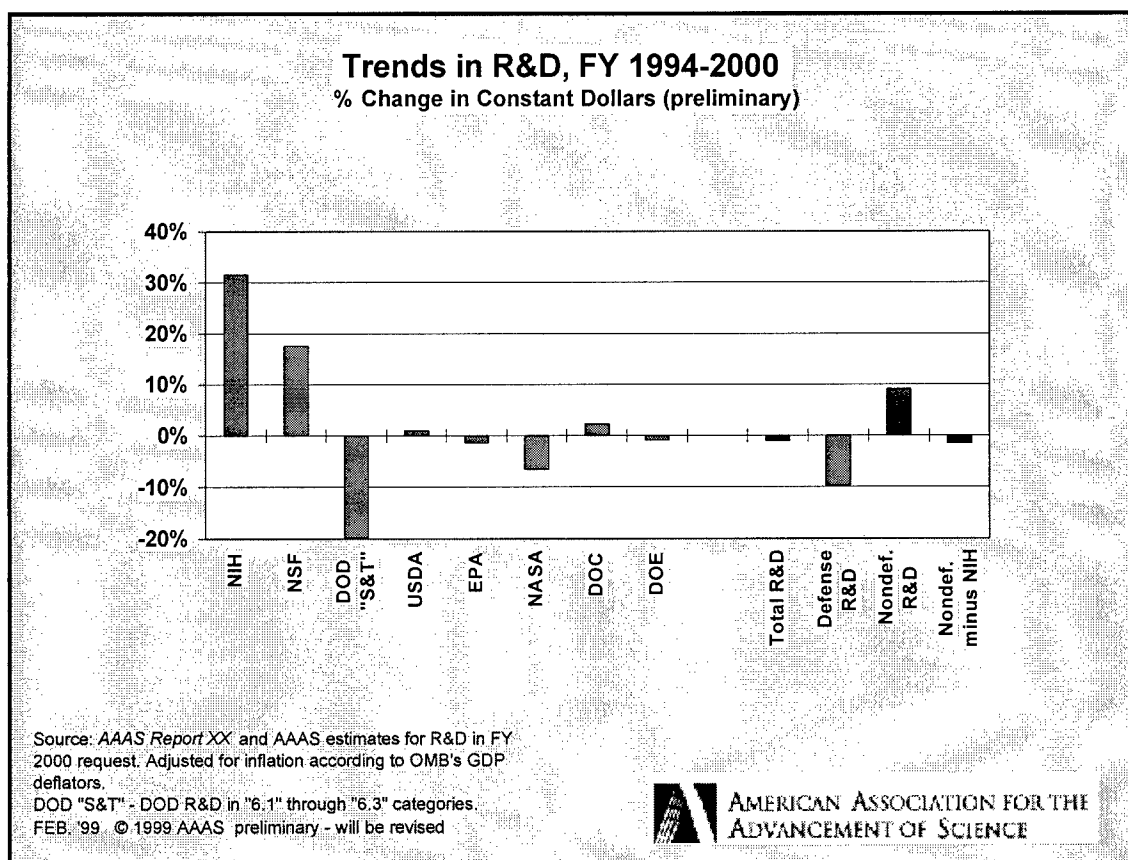


Figure 2.

Recent Trends in Federal R&D

The FY 2000 budget request would, for the most part, build on the significant increases to R&D programs approved in the FY 1999 budget process (see the AAAS publication *Congressional Action on R&D in the FY 1999 Budget*). Budget cuts enacted in the mid-90s, when the deficit still loomed large in budget policy, left many agencies with R&D budgets below the levels of the early 1990s. But because of large increases last year and smaller proposed increases in this budget, several agencies have now recovered lost ground, and NIH and NSF are at all-time highs in funding.

Figure 2 shows six-year funding trends for the R&D budgets of several agencies, measured from FY 1994 (the peak funding year before budget cuts) to the proposed funding levels in FY 2000. The chart shows that only NIH and NSF have grown significantly over this time period. NIH in FY 2000 would enjoy an inflation-adjusted R&D budget nearly a third above FY 1994. NSF would be nearly 20 percent above the FY 1994 funding level. However, agencies such as USDA, NASA, EPA, DOE, and Commerce would remain flat or below their FY 1994 funding levels. Although nondefense R&D would hit an all-time peak funding level in FY 2000 if the request is approved, the gains over the six years have disproportionately gone to NIH. Nondefense R&D excluding NIH (Figure 2 far right column) would still be below FY 1994, even after factoring in the large proposed increases for NSF, DOE, DOT, and others in FY 2000 because of cuts in previous years. Defense R&D, meanwhile, would fall in FY 2000, continuing a long post-Cold War slide beginning in the late 1980s that would leave DOD's funding for science and technology (research plus technology development, excluding weapons systems development) 20 percent below FY 1994.

Impacts of Funding Trends on the Federal Research Portfolio

The large increases for NIH in the past few years, and indeed for the past few decades, have resulted in a dramatic expansion in federal support for life sciences research, nearly three-quarters of which is funded by NIH. Other disciplines, funded by agencies with stagnant or declining budgets, have not fared as well.

Not surprisingly, the upward trend in life sciences research (see Figure 3) mirrors the steady growth in the NIH budget over the past three decades. This trend is remarkable when contrasted with how other disciplines have fared during this time period. Federal support for engineering research, which was greater than life sciences support in FY 1970, has stagnated for three decades. Support for the physical sciences (physics, chemistry, astronomy, etc.) showed slow but steady increases until the early 1990s, but has declined since then due to cuts in DOE and especially DOD.

As a result, the federal research portfolio is dramatically different in FY 1999 than it was three decades ago. Of the total federal research portfolio of \$33 billion in FY 1999 (excluding development and R&D facilities), \$14 billion (or nearly 44 percent) goes to life sciences research, compared with less than 30 percent in FY 1970. This dramatic growth for the life sciences combined with flat or declining funding in the other sciences supported by agencies other than NIH has resulted in increasing concern within the scientific community that the federal portfolio has become unbalanced.

In response, the FY 2000 budget proposal calls for a modest increase to NIH and larger increases to R&D programs in agencies such as NSF and DOE, whose support is key to most non-life

sciences fields. The text of the budget proposal states, "This budget reflects an effort to establish an optimum balance between health care research and other scientific disciplines - a concern voiced in recent years throughout the scientific community."

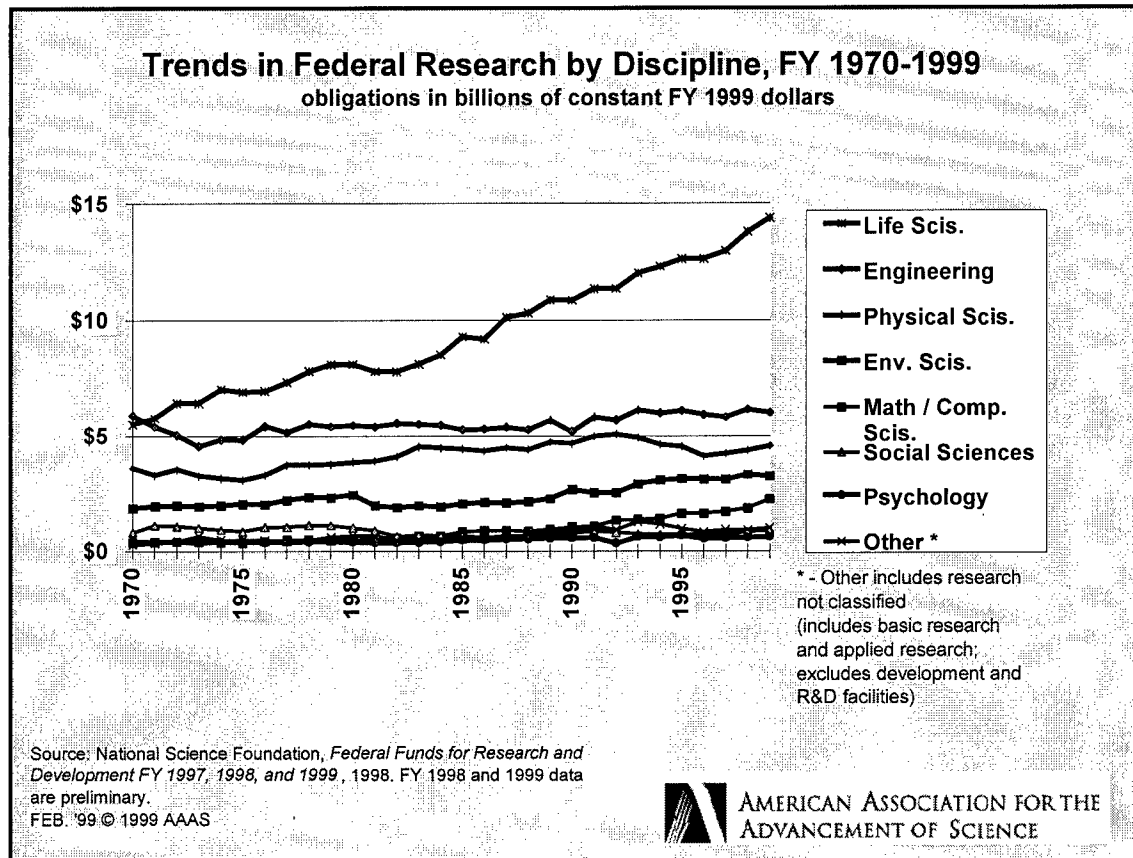


Figure 3.

Outyear Projections and Outlook

The modest increases for nondefense R&D programs in the FY 2000 budget are projected to become flat funding or cuts in future years because of the discretionary spending caps and the lack of any significant additional offsets in the future. Although AAAS has not yet performed its annual analysis of the outyear projections in the FY 2000 budget (scheduled release: early March), a similar analysis in the President's budget proposals show all agencies' R&D budgets declining in real terms between FY 2000 and FY 2004. NIH R&D is projected to decline by 7.7 percent in real terms between FY 1999 and FY 2004; NSF, decline by 2.1 percent; NASA, by 3.7 percent. Defense R&D is projected to decline 13.1 percent in real terms over this time period.

These projections are far less detailed in the FY 2000 budget than in previous years, casting even more than the usual doubt on their reliability as an indicator of the Administration's future priorities. They also do not take into account a small unallocated discretionary reserve fund that may become available if the Administration's proposed Social Security reform is adopted. The Administration proposes to use some of the reserve to boost the NIH budget in the years.

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The projections show, however, that the Administration plans to increase defense spending every year, to \$322 billion in FY 2004, nearly \$50 billion above FY 1999. In order to accommodate such an increase, nondefense discretionary funding is projected to fall sharply in real terms.

The news, then, for federal R&D in the FY 2000 budget is mixed. Although there are proposed increases for priority programs in NSF, DOE, and others, all of the discretionary budget proposals are constrained by the continuing existence of the budget cap and the political viability of proposed offsets, especially tobacco. In addition, the existence of single cap in FY 2000 could ignite a political battle between defense vs. domestic spending, a battle that could be avoided when there were separate caps. If the budget process drags on into the fall, the politics of designating spending as "emergency" may once again appear. Although Congress and the President have entered the new and as yet uncharted dynamics of politics in an age of projected surpluses measured in trillions, for federal R&D the new era has yet to arrive.

-February 4, 1999

(More information on the 24th Annual AAAS Colloquium on Science and Technology Policy, and on *AAAS Report XXIV: Research and Development FY 2000*, can be found on the AAAS R&D Web site at <http://www.aaas.org/spp/R&D/>, or by calling 202-326-6600.)

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A Preliminary Analysis of R&D in the FY 2000 Budget

Table 1. R&D in the FY 2000 Budget by Agency
(budget authority in millions of dollars)

| | FY 1998 | FY 1999 | FY 2000 | Change FY 99-00 | |
|---|---------------|---------------|---------------|-----------------|--------------|
| | Actual | Estimate | Budget | Amount | Percent |
| Total R&D (Conduct and Facilities) | | | | | |
| Defense (military) | 37,568 | 37,204 | 35,064 | -2,140 | -5.8% |
| S&T (6.1-6.3) | 7,712 | 7,791 | 7,386 | -405 | -5.2% |
| All Other DOD R&D | 29,856 | 29,413 | 27,678 | -1,735 | -5.9% |
| Health and Human Services | 13,860 | 15,792 | 15,984 | 192 | 1.2% |
| Nat'l Institutes of Health | 13,128 | 15,013 | 15,331 | 318 | 2.1% |
| NASA | 9,753 | 9,714 | 9,771 | 57 | 0.6% |
| Energy | 6,483 | 7,240 | 7,465 | 225 | 3.1% |
| Nat'l Science Foundation | 2,528 | 2,721 | 2,934 | 213 | 7.8% |
| Agriculture | 1,561 | 1,796 | 1,718 | -78 | -4.3% |
| Commerce | 1,091 | 1,075 | 1,162 | 87 | 8.1% |
| NOAA | 581 | 600 | 600 | 0 | 0.0% |
| NIST | 503 | 468 | 555 | 87 | 18.6% |
| Interior | 472 | 517 | 590 | 73 | 14.1% |
| Transportation | 859 | 891 | 1,260 | 369 | 41.4% |
| Environ. Protection Agency | 636 | 669 | 645 | -24 | -3.6% |
| All Other | 1,515 | 1,648 | 1,649 | 1 | 0.1% |
| Total R&D | 76,326 | 79,267 | 78,242 | -1,025 | -1.3% |
| Defense | 40,570 | 40,638 | 38,481 | -2,157 | -5.3% |
| Nondefense | 35,756 | 38,629 | 39,761 | 1,132 | 2.9% |
| Basic Research | 15,658 | 17,499 | 18,226 | 727 | 4.2% |
| Applied Research | 15,144 | 16,134 | 16,169 | 35 | 0.2% |
| Development | 42,721 | 42,490 | 40,799 | -1,691 | -4.0% |
| R&D Facilities and Equipment | 2,803 | 3,144 | 3,048 | -96 | -3.1% |
| "FS&T" ¹ | 45,619 | 48,997 | 49,721 | 724 | 1.5% |

Source: AAAS, based on OMB data for R&D for FY 2000, agency budget justifications, and information from agency budget offices.

¹ An alternative measure for the federal investment in science and technology proposed by the National Academy of Sciences. This measure includes all federal R&D except for advanced development, testing and evaluation work in DOD and DOE.

February 4, 1999 - Preliminary - will be revised.

A Preliminary Analysis of R&D in the FY 2000 Budget

Table 2. Major Functional Categories of R&D¹
(budget authority in millions of dollars)

| | FY 1998 Actual | FY 1999 Estimate | FY 2000 Budget | Change FY 99-00 | | % Share of Total ('00) |
|--------------------------|-------------------|---------------------|-------------------|-----------------|--------------|---------------------------|
| | | | | Amount | Percent | |
| Defense | 40,570 | 40,638 | 38,481 | -2,157 | -5.3% | 49.2% |
| Nondefense ² | 35,756 | 38,629 | 39,761 | 1,132 | 2.9% | 50.8% |
| Space | 8,426 | 8,518 | 8,701 | 183 | 2.1% | 11.1% |
| Health | 14,407 | 16,421 | 16,601 | 180 | 1.1% | 21.2% |
| Energy | 1,307 | 1,192 | 1,295 | 103 | 8.6% | 1.7% |
| General Science | 4,789 | 5,419 | 5,769 | 350 | 6.5% | 7.4% |
| Environment ³ | 1,924 | 2,038 | 2,110 | 72 | 3.5% | 2.7% |
| Agriculture | 1,369 | 1,585 | 1,476 | -109 | -6.9% | 1.9% |
| Transportation | 2,186 | 2,087 | 2,330 | 243 | 11.6% | 3.0% |
| Commerce | 509 | 474 | 561 | 87 | 18.4% | 0.7% |
| International | 169 | 171 | 123 | -48 | -28.1% | 0.2% |
| All Other | 670 | 724 | 795 | 71 | 9.8% | 1.0% |
| Total R&D | 76,326 | 79,267 | 78,242 | -1,025 | -1.3% | 100.0% |

Source: Authors' estimates based on data from OMB and agency budget justifications.

Classifications generally follow the government's budget function categories except health (which here includes health R&D in HHS and VA).

All figures are rounded to the nearest million. Changes calculated from unrounded figures.

¹ Includes conduct of R&D and R&D facilities.

² Includes all R&D not in defense.

³ Includes natural resources R&D.

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Table 3. Research in the FY 2000 Budget
(budget authority in millions of dollars)

| | FY 1998 | FY 1999 | FY 2000 | Change FY 99-00 | |
|-----------------------------------|---------------|---------------|---------------|-----------------|-------------|
| | Actual | Estimate | Budget | Amount | Percent |
| BASIC RESEARCH | | | | | |
| Defense (military) | 1,011 | 1,108 | 1,114 | 6 | 0.5% |
| Health and Human Services | 7,366 | 8,460 | 8,614 | 154 | 1.8% |
| <i>Nat'l Institutes of Health</i> | 7,365 | 8,458 | 8,612 | 154 | 1.8% |
| NASA | 2,136 | 2,284 | 2,587 | 303 | 13.3% |
| Energy | 2,098 | 2,228 | 2,283 | 55 | 2.5% |
| Nat'l Science Foundation | 2,122 | 2,327 | 2,549 | 222 | 9.5% |
| Agriculture | 606 | 743 | 722 | -21 | -2.8% |
| Commerce (NIST) | 35 | 36 | 37 | 1 | 2.8% |
| Interior | 48 | 50 | 54 | 4 | 8.0% |
| Transportation | 12 | 14 | 15 | 1 | 7.1% |
| Environ. Protection Agency | 57 | 83 | 79 | -4 | -4.8% |
| Smithsonian | 126 | 128 | 136 | 8 | 6.3% |
| Veterans Affairs | 14 | 9 | 9 | 0 | 0.0% |
| All Other | 27 | 29 | 27 | -2 | -6.9% |
| Total Basic Research | 15,658 | 17,499 | 18,226 | 727 | 4.2% |
| RESEARCH (basic + applied) | | | | | |
| Defense (military) | 3,921 | 4,259 | 4,070 | -189 | -4.4% |
| Health and Human Services | 11,999 | 13,697 | 13,831 | 134 | 1.0% |
| <i>Nat'l Institutes of Health</i> | 11,305 | 12,955 | 13,208 | 253 | 2.0% |
| NASA | 4,407 | 4,466 | 4,425 | -41 | -0.9% |
| Energy | 3,841 | 4,115 | 4,392 | 277 | 6.7% |
| Nat'l Science Foundation | 2,293 | 2,507 | 2,734 | 227 | 9.1% |
| Agriculture | 1,334 | 1,573 | 1,505 | -68 | -4.3% |
| Commerce | 799 | 846 | 871 | 25 | 3.0% |
| <i>NOAA</i> | 497 | 544 | 543 | -1 | -0.2% |
| <i>NIST</i> | 296 | 296 | 322 | 26 | 8.8% |
| Interior | 442 | 468 | 560 | 92 | 19.7% |
| Transportation | 450 | 324 | 695 | 371 | 114.5% |
| Environ. Protection Agency | 476 | 470 | 447 | -23 | -4.9% |
| Veterans Affairs | 254 | 289 | 288 | -1 | -0.3% |
| Education | 153 | 157 | 174 | 17 | 10.8% |
| Agency for Int'l Develop. | 124 | 116 | 86 | -30 | -25.9% |
| Smithsonian | 126 | 128 | 136 | 8 | 6.3% |
| All Other | 183 | 218 | 181 | -37 | -17.0% |
| Total Research | 30,802 | 33,633 | 34,395 | 762 | 2.3% |

Source: AAAS, based on OMB data for R&D for FY 2000, agency budget justifications, and information from agency budget offices.

February 4, 1999 - Preliminary - will be revised.

A Preliminary Analysis of R&D in the FY 2000 Budget

Table 4. Federal Support for Conduct of R&D at Colleges and Universities
(budget authority in millions)

| | FY 1998 | FY 1999 | FY 2000 | Change FY 99-00 | | % of |
|---|---------------|---------------|---------------|-----------------|-------------|---------------|
| | Actual | Estimate | Budget | Amount | Percent | Total ('00) |
| Health & Human Services | 8,194 | 9,480 | 9,566 | 86 | 0.9% | 61.8% |
| Nat'l Science Foundation | 1,957 | 2,161 | 2,331 | 170 | 7.9% | 15.1% |
| Defense (Military) | 1,053 | 931 | 936 | 5 | 0.5% | 6.0% |
| NASA | 910 | 954 | 914 | -40 | -4.2% | 5.9% |
| Energy | 638 | 647 | 670 | 23 | 3.6% | 4.3% |
| Agriculture | 442 | 418 | 493 | 75 | 17.9% | 3.2% |
| Environ. Protection Agency | 170 | 178 | 169 | -9 | -5.1% | 1.1% |
| Interior | 24 | 24 | 44 | 20 | 83.3% | 0.3% |
| Transportation | 76 | 67 | 76 | 9 | 13.4% | 0.5% |
| Commerce | 86 | 82 | 82 | 0 | 0.0% | 0.5% |
| Education | 128 | 137 | 164 | 27 | 19.7% | 1.1% |
| Nuclear Reg. Comm. | 5 | 4 | 4 | 0 | 0.0% | 0.0% |
| Postal Service | 5 | 5 | 5 | 0 | 0.0% | 0.0% |
| Social Security | 5 | 36 | 23 | -13 | -36.1% | 0.1% |
| Total R&D at Colleges and Universities | 13,693 | 15,124 | 15,477 | 353 | 2.3% | 100.0% |

Source: AAAS, based on OMB supporting data for R&D and agency budget justifications.

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